



CALFED BAY-DELTA PROGRAM

The CALFED Bay-Delta Program is an unprecedented cooperative effort among state and federal agencies and the public to ensure a healthy ecosystem, reliable water supplies, good water quality, and stable levees in California's Bay-Delta.

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Alternative 3

Common Program

- Ecosystem Restoration
- Water Quality
- Levee System Integrity
- Water Use Efficiency

Conveyance

Existing system of through-Delta channels, with significant capacity improvements, plus an isolated conveyance facility

Storage

0-500 TAF Conjunctive Use/
Groundwater Banking
0-3 MAF Upstream Surface
Storage
0-600 TAF In-Delta Surface
Storage
0-1.5 MAF South-of-Delta
Surface Storage

Conjunctive Use *Integrated management of surface water and groundwater supplies to meet overall water supply and resource management objectives.*

Upstream Storage *Any offstream storage upstream of the Delta supplied by the Sacramento or San Joaquin Rivers or their tributaries.*

Groundwater Banking *Using available storage capacity within groundwater basins to store surface water that is recharged during periods when it is available (e.g. during peak flood flows).*

South-of-Delta Storage *Any offstream storage supplied with water exported south from the Delta.*

TAF/MAF *Abbreviation for thousand acre feet and million acre feet. An acre foot is the volume of water that would cover one acre to a depth of one foot, or 325,851 gallons of water. On average, could supply 1-2 households with water for a year.*

Overview

Similar to the other CALFED Bay-Delta Program alternatives, Alternative 3 includes the common program, a storage element, and a system for moving, or conveying, water. The common programs are essentially the same in all alternatives. Alternative 3 will also include storage (at a level to be determined in Phase II), along with both improved through-Delta conveyance and a conveyance facility isolated from existing channels (a man-made channel, isolated from natural channels, to convey part or all of the water intended for export.)

Alternative 3 encompasses a wider range of subalternatives than Alternatives 1 or 2. The new isolated conveyance facility could range in capacity from 5,000 to 15,000 cubic feet per second (cfs) or higher. At the lower capacity levels, a buried pipeline could be used. The Program staff will also evaluate a fully isolated conveyance facility with sufficient capacity to meet the full physical capacity of the south Delta pumps (15,000 cfs). An isolated facility could supply most Delta export needs during spring when fish are most vulnerable to through-Delta conveyance. The isolated conveyance facility could also supply water via spur lines to south Sacramento County, San Joaquin County, and the Bay Area.

The isolated facility could be supplied through a diversion on the Sacramento River at a location between Hood and Freeport. The diversion would be equipped with state-of-the-art fish screens. However, staff also intends to study different versions of earlier Program proposals to connect an isolated facility with upstream storage facilities, possibly via the Sacramento Ship Canal and an extension of existing canals in the Sacramento Valley, or to carry the isolated facility through the Delta in the form of a chain of lakes.

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Fish Screens *Physical structures placed at water diversion facilities to keep fish from getting pulled into the facility and dying there.*

Real-Time Monitoring *Continuous observation in multiple locations of biological conditions on site in order to adjust water management operations to protect fish species and allow optimal operation of the water supply system.*

Water Transfers *Voluntary water transactions conducted under state law and in keeping with federal regulations.*

Some Potential Benefits

- Increases supply opportunities, transfers, and wet year diversions while preserving, at some level, the common Delta pool (common source of fresh water for all users, with all users sharing the benefits and responsibilities for the in-Delta system).
- Reduces fish entrainment.

Some Potential Concerns

- Could decrease central and south Delta water quality if not managed carefully.
- Construction of an isolated conveyance facility could disrupt wetland and terrestrial habitats and other land uses.
- A Sacramento River diversion could expose more migrating salmon to screening impacts. The diversion would be in critical habitat for native fish.

The through-Delta conveyance in Alternative 3 could vary from use of the existing channels to channel enlargements by dredging and setback levees or significant restructuring of Delta channels and flow patterns. An option to screen the Sacramento River diversion will be studied to supplement the improvements to existing fish screens at the Delta pumps, which will be studied for all options.

In Phase II, technical studies will help determine storage provisions to complement this alternative. For each combination of through-Delta and isolated conveyance, staff will study several possible storage capacities and locations. Additional upstream storage could be located north, east, or south of the Delta.

Probable ranges of storage to be studied in Alternative 3 are conjunctive use/groundwater banking (0-500 TAF), upstream surface storage (0-3 MAF), in-Delta surface storage (0-600 TAF), and south-of-Delta surface storage (0-1.5 MAF). Upstream storage could be filled using the excess capacity of the Tehama Colusa Canal and the Glenn Colusa Canal, and the storage could conjunctively serve the irrigation districts now served by these canals. The Tehama Colusa Canal could also be extended to serve Yolo County and the North Bay Aqueduct, eliminating that diversion.

Operations

The dual Delta conveyance would increase operational flexibility to divert water while protecting fish from the effects of diversions. With two distinct diversion points, one on the Sacramento River and another in the south Delta, different diversions could be used at different times, depending upon the location of vulnerable fish species. Normally, some water would continue to be conveyed through the Delta to maintain circulation in the central and south Delta. Meanwhile, the permitted capacity of south Delta pumps could be increased to their full physical capacity during periods when fish are less vulnerable to the effects of these diversions. Real-time monitoring of fish populations, though early in its development stage and requiring additional validation and calibration, could be used to help identify these periods. Diverting water from the Sacramento River into the Delta and the isolated facility would require re-evaluation of standards for allowable export ratios and salinity standards to protect the Bay-Delta ecosystem.

Adjustments to the Common Programs

For each alternative, slight adjustments will be made to complement the alternative's storage and conveyance system. For example, in Alternative 3 partially isolating conveyance to south-of-Delta users could degrade south Delta water quality at certain times of the year. This would require mitigation, such as development of water to increase San Joaquin River flows or development of in-Delta storage. On the other hand, the water use efficiency program could emphasize water transfers, since the more flexible and efficient conveyance of Alternative 3 would help facilitate transfers.